

Ceramic Metal Halide Fact Sheet

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Ceramic metal halide (CMH) lamps are high intensity discharge (HID) lamps. HID lamps operate on the principle that an arc struck between two electrodes produces light. CMH lamps utilize a ceramic arc tube to contain the arc. The ceramic tube can withstand higher temperatures and pressures than a conventional glass arc tube. Thus, the lamp has slightly higher efficacy and better color stability. The electrodes deteriorate over time, which is a major cause of lamp failure.

Suitable Applications Include:

The best application for CMH is for directional display lighting (i.e., track lighting) of retail displays. Other good applications are lobbies, atriums, or foyers in commercial or high-end residential areas. Museums and art galleries are great applications as well. Anywhere a high quality, directional light is needed, CMH is the best choice.

Basic Lamp Specifications:

- 9,000 to 20,000 hour life -- Typical 12,000 hours, or about three years
- High initial efficacy, medium mean efficacy -- 97 to 60 lumens/watt
- Crisp white light with up to 93 CRI -- Excellent color rendering
- FadeBlock -- UV filtering to keep paintings and merchandise from fading
- Dimmable -- Lamps can reduce to about 50 percent of light output
- Color temperature 3000 to 4200 Kelvin -- Lifetime color stability within 200 Kelvin
- Temperature tolerant -- Operates in hot and cold environments

These lamps are a significant improvement over incandescent in terms of light quality and energy savings.

Product Descriptions and Other Considerations:

The light source consists of a ballast, igniter, and bulb. The ballast provides the start-up voltage, then backs off and delivers a constant operating voltage and current. The igniter strikes the arc. The bulb houses the arc tube. Bulbs come in various shapes, including a reflector (PAR lamp).

Philips markets under the "MasterColor" series (39-400 watts). OSRAM/Sylvania markets their product under the "MetalArc Ceramic" name (39-150 watts). GE's version is called "ConstantColor CMH" (39-150 watts).

From an energy savings standpoint, CMH lamps are only cost effective when compared to incandescent lamps. A new CMH luminaire can replace an existing incandescent luminaire. In new construction, substitute incandescent luminaires with new CMH luminaires.

CMH luminaires cost around \$200 more than a typical incandescent commercial grade luminaire. However, the price difference is small compared to other "high-end commercial grade" luminaries, and the advantages can outweigh the additional costs.

